

ZELENETSKAYA, I.S., kand.tekhn.nauk; NARSIKH, I.I., kand.tekhn.nauk;
NASYROV, R.A., kand.tekhn.nauk; ROMANOVA, L.A., inzh.

Damage to the pistons and crankshaft bearings of the ZD100 diesel
locomotives during operation when using various lubricating oils.
Trudy TSNII MPS no.262:5-20 '63. (MIRA 16:10)

VOLODIN, A.I., kand.tekhn.nauk; VARSKIY, I.I., kand.tekhn.nauk,
ZAGORYANSKIY, Yu.A., inzh.

Methods for measuring the wear of the crankshafts of diesel
locomotive engines. Tudy TSNII MPS no.262:73-84 '63.

(MIRA 16:10)

NARSIKH, I.I., kand.tekhn.nauk

Analyzing the performance of the crankshaft bearing assembly
of the D50 diesel locomotive engine. Trudy TSNII MPS no. 24
85-100 '63. (MIRA 1:10)

NARSKIKH, R.S.

The Brazilian geographical school atlas. Geod. 1 kart. no.7:
55-60 J1 '61. (MIRA 14:7)
(Atlases, Brazilian)

NARSIKH, R.S.; FRAVOTKOVA, G.A.

Bulgarian geographical school atlas. Geoc. i kart. no. 12: 12-65
D '61. (..IR: 15:1)

(Atlases, Bulgarian)

VABAR, M.M.; MARSHIN, R.S.; SEREBRYANNYY, L.R.

New edition of the "Atlas of Finland." Izv. AN SSSR. Ser. geog
no.1:144-149 Ja-F '62. (MIRA 15:2)

1. Institut geografii AN SSSR i Institut mirovoy ekonomiki i
mezhdunarodnykh otnosheniy.
(Finland--Maps)

NARSKIKH, R.S.; PRAVOTOROVA, G.A.

The great Italian geographic and economic atlas "View of the Globe".
Geod. i kart. no.5:71-76 My '62. (MIRA 15:7)
(Atlases, Italian)

SEREBRYANNYY, L.R.; MARSHIKH, R.S.

National atlas of Australia. Izv. AN SSSR. Ser. geog. no. 2:129-
135 Mr-Apr '63. (MIRA 16:4)

(Australia ~~Maps~~)

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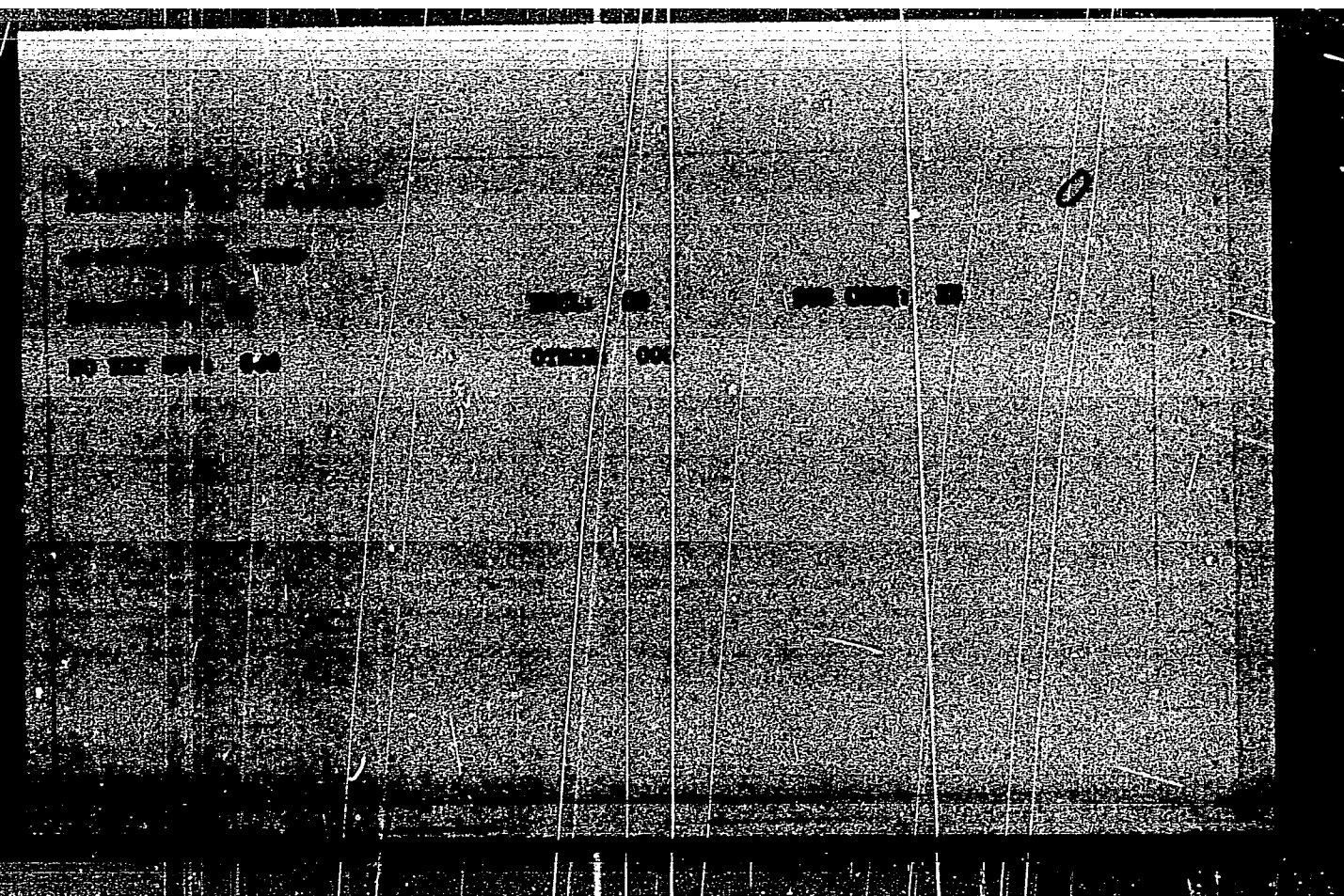
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Abstract: A comprehensive atlas of the Azerbaijan SSR was published by the Main Administration of Geodesy and Cartography in 1963 in both the Russian and Azerbaydzhan languages. The maps of the atlas are based on extensive research in various branches of sciences, on the latest statistical data (status as of January 1, 1961). The basic map scales are 1: 1,500,000, 1: 2,500,000, and 1: 3,000,000. The atlas consists of a foreword and five chapters, with an introductory chapter (including the maps on political administrative subdivisions and population), natural conditions, economics, cultural activities, and history. Of particular interest is the chapter on "geological and geomorphological maps" which includes geological and tectonic maps, as well as a map of structural regionalization. Of great practical importance is the map of seismic zoning, featuring the zones of

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of the Azerbaijan SSR, as well as earthquakes and the years of earthquakes occurrence. A hydrogeological map shows 3 zones of ground waters classified according to their degree of mineralization and chemical composition. Huge resources of subterranean heat are to be found in Azerbaijan in the form of thermal waters. The location of various mineral deposits is shown on the maps in conjunction with the relief. The hydrological maps give a detailed picture of the hydrography of Azerbaijan, which is divided into 12 hydrological regions. The atlas also contains maps reflecting the hydrological and meteorological conditions of the Caspian Sea in general, and of the Azerbaijani seaside in particular. On the basis of historical materials and (since 1900) of the data of actual observations, a diagram of the variations in the level of the Caspian Sea during a period of 1760 years has been constructed. The long-period variations of the sea level are known to affect the development of related branches of the national economy, such as oil and gas production, fisheries, sea transport, et cetera. Offshore oil and gas deposits are shown on a special map which indicates the presently exploited and the prospective oil and gas offshore areas. The Azerbaijan SSR is subdivided into 10 economic-geographic regions, according to their specialized and distinct economy. Numerous additional diagrams show the relative importance of each region with respect to the territory, population, individual branches of industry, et cetera.



L 35923-06

ACC NR: AP6007914

(A)

SOURCE CODE: UR/0006/66/000/002/006/0067

AUTHOR: Marskikh, R. S.; Pravotorova, G. A.

ORG: none

TITLE: Czechoslovakian military atlas

SOURCE: Geodeziya i kartografiya, no. 2, 1966, 63-67

TOPIC TAGS: political history, cartography

ABSTRACT: The recently-published atlas (*Československý vojenský atlas*, published jointly by the Ministry of Public Education and the Czechoslovakian Academy of Sciences, Prague, 1965, 376 p.) is divided into two parts: geographic (279 maps and 116 city plans) and military history (229 maps and 206 battle plans). The first division comprises the chapters on the cosmos, the world as a whole, Europe, the USSR, Asia, Africa, North and South America, Australia, and Oceania. The military history division contains chapters on slavery, feudalism, capitalism, and the transition from capitalism to socialism. The sub-division describes the Civil War in China (1946-1949), the Korean War (1950-1953) and the Algerian, Vietnam, and Cuban conflicts. A brief critical review of individual chapters is given.

SUB CODE: 05/
08/

SUBM DATE: none

UDC: 912.44(437) (048)

Card 1/1 112-

SOV/135-59-10-15/23

18(3)

AUTHORS: Narskiy, S.A., Engineer, and Grishin, M.A.

TITLE: Comparison of Several Electrodes for Cold Welding of Cast Iron

PERIODICAL: Svarochnoye proizvodstvo, 1959, Nr 10, pp 34-37 (USSR)

ABSTRACT: The Vsesoyuznyy proyektno-tekhnologicheskii institut (VPTI) (All Union Institute for Planning and Technology) of the Leningrad Sovnarkhoz conducted comparative examinations of 11 types of electrodes for cold welding of cast iron. The purpose of this examination is the establishment of a nomenclature of electrodes for their centralized production. According to the composition of the weld metal, the electrodes are divided into five groups: 1) Electrodes which produce weld metal of low carbon steel; 2) electrodes of low carbon wire with a coating which provide the obtaining of sulphur cast iron; 3) electrodes made of cast iron with a special coating which provide high quality cast iron welds; 4) electrodes of iron-nickel alloys, coated with a special smear, which provide a weld metal of austenitic structure, 5) electrodes with wires of copper-nickel alloy, which provide the obtaining of

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SOV/135-59-10-15/23

Comparison of Several Electrodes for Cold Welding of Cast Iron

welds with high plastic qualities. The mechanical qualities are determined by round samples (Fig.1). Table 1 shows the types and the characteristics of the examined electrodes. Table 2 gives the welding conditions. The results are given in detail in tables 3 and 4. Table 6 shows the microstructure of the welded joints. As a summary it was established that the electrodes of the first group cannot be recommended for mass production. From the second group the electrode type EMChS can be recommended. Also the electrodes of group III (EMCh, AMCh), of group IV (ASZ-7, ZhNB) and of group V (MNB-40, MNB-30) gave satisfying results and can be recommended for use. There are 1 photograph, 1 diagram and 6 tables.

ASSOCIATION: VPTI Leningradskogo sovnarkhoza (VPTI of Leningrad Sovnarkhoz)

Card 2/2

RYZHAPOV, Vasilii Nikolayevich; NARSKIY, Sergey Aleksandrovich;
VYDRIN, Lev Borisovich; NAZAROV, M.I., red.

[Using gases as acetylene substitutes in welding] Priznaniye gazov-zamenitelei atsetilena v svarochnom proizvodstve. Leningrad, 1963. 21 p. (Leningradskii dom nauchno-tekhn. propagandy. Obmen peredovym opytom. Seriya: Svarka, rezka i paika metallov. no.4) (MIRA 18.3)

NARSKIY, S.A., inzh.; VODIN, L.B., inzh.

Welding carbon steel using a propane-butane mixture. Svar. promy.
no.9:34-35 S '63. (MIRA 1-11)

1. Nauchno-issledovatel'skiy institut tekhnologii mashinostroyeniya
Leningradskogo soveta narodnogo khozyaystva.

NARSKIY, S. V.

USSR/Diseases of Farm Animals. Diseases Caused by Viruses and Rickettsiae R

Abs Jour: Ref Zhur-Biol., No 9, 1958, 40658.

Author : Famkov, V. A. Bezprozvanny, B. K., Narskiy, S. V.,
Terebun, N. Ye.

Inst :

Title : Infectious Hepatitis in Dogs.

Orig Pub: Veterinariya, 1957, No 8, 39-44.

Abstract: Enzooty of infectious hepatitis in a service dog nursery was observed by the authors. Mainly, puppies of the ages from two to five months took sick, predominantly during the spring and fall seasons. In most of the cases the disease proceeded benignantly, with the exception of the still sucking puppies who all died within a few days without distinct clinical

Card : 1/3

USSR/Diseases of Farm Animals. Diseases Caused by Viruses
and Rickettsiae.

Abs Jour: Ref Zhur-Biol., No 9, 1958, 40658.

data being available. The basic symptoms of the disease were rise in temperature, tonsillitis, sometimes accompanied by throat edema, labored breathing with severe hoarseness; some of the puppies vomitted in the later stages of the disease, developed keratitis, diarrhea, mixed with blood at times, had severe pain in the lower abdomen which was revealed by palpation. Some of the animals showed the effects of excitation. In a hyperacute course of the disease, death ensued a few hours after appearance of clinical symptoms; in acute cases the disease lasted three to seven days. Usually, up to 10 percent of the animals died. Morphological examination revealed changes characteristic of infectious hepatitis in dogs.

Card : 2/3

36

ANAN'YEV, V.A.; BEZPROZVANNYY, B.K.; NARSKIY, S.V.

Experimental study on infectious canine hepatitis (Rubarth's disease). Report No.1: Isolation of the canine hepatitis virus in various clinical forms of disease. Vop.virus. 4
no.2:231-236 Mr-Ap '59. (MIRA 12:6)

1. Institut virusologii imeni D.I.Ivanovskogo AMN SSSR,
patologoanatomicheskaya laboratoriya MVO i Tsentral'naya
shkola sobakovodstva Moskovskoy oblasti.

(HEPATITIS, INFECTIOUS, virus,

infect. canine hepatitis, isolation of viruses
in various forms of dis. (Rus))

ANAN'YEV, V.A.; NARSKIY, S.V.; BESPROZVANNYY, B.K.; NAZARJYAN, Ye.L.;
PRISS, I.S.

Experimental study of infectious hepatitis in dogs. Report No.2:
Clinical and laboratory findings in infection. Vop. virus. 5 no.4:
468-473 Je-Ag '60. (MIRA 14:1)

1. Institut virusologii imeni D.I. Ivanovskogo AMN SSSR, Moskva.
(HEPATITIS, INFECTIONS)

ANAN'YEV, V.A.; BESPROZVANNYY, B.K.; NARSKIY, S.V.

Unusual strain of hepatitis virus in dogs. Vop. virus 5 no.4:
473-478 Je-Ag '60. (MIRA 14:1)

1. Institut virusologii imeni D.I.Ivanovskogo AN SSSR, Moskva.
(HEPATITIS, INFECTIONS)

ANAN'YEV, V.A.; NARSKIY, S.V.; BEZPROZVANNYY, B.K.; KUBORINA, L.N.

Experimental study of infectious hepatitis in dogs. Report No.3:
Cultivation of the virus and specific reactions. Zhur. mikrobiol.
epid. i immun. 31 no.3:71-75 Mr '60. (MIRA 14:6)

1. Iz Instituta virusologii imeni Ivanovskogo AMN SSSR.
(HEPATITIS, INFECTIOUS)

METELEVA, R.I.; BEZPROZVANNYY, B.K.; ANAN'YEV, V.A.; MARSKIY, S.V.

Viral hepatitis in arctic foxes. Veterinariia 38 no.10:51-55
0 '61. (MIRA 16:2)

1. Yamal'skaya sel'skokhozyaystvennaya opytная stantsiya ' -
Metaleva). 2. Institut virusologii imeni D.I.Ivanovskogo for
Besprozvanny, Anan'ev, Marskiy).
(Yamal-Nenets National Area—Arctic fox—Diseases and pests,

ANAN'YEV, V.A.; ~~NARSKIY, S.V.~~; ISMAILOVA, M.Kh.

Diffusion precipitation in gel reaction for detecting antigens and antibodies in epidemic hepatitis (Botkin's disease). Vop. okh. mat. i det. 7 no.3:33-36 Mr '62. (MIRA 15:5)

1. Iz Instituta virusologii imeni D.I.Ivanovskogo AMN SSSR i kafedry detskikh infektsionnykh bolezney II Moskovskogo meditsinskogo instituta imeni N.I.Pirogova.

(HEPATITIS, INFECTIOUS)(ANTIGENS AND ANTIBODIES--ANALYSIS)

ANAN'YEV, V. A., MARSKIY, S. V., BEZPROZVANNYYI, B. K. and VOLKOVA, V. N.
(Institute of Virology imeni D. I. Ivanovskii, Academy of Medical Sciences
USSR).

"Specific diagnosis of infectious hepatitis in dogs---"
Veterinariya, vol. 39, no. 2, February 1962 pp. 37

ANAN'YEV, V.A.; KAVERIN, N.V.; NARSKIY, S.V.; BARINSKIY, I.F.

Characteristics of the virus isolated from feces of a patient
with epidemic hepatitis (strain K3). Vop. virus 8 no.2:217-221
Mr-Ap'63 (MJRA 16:12)

1. Institut virusologii imeni D.I.Ivanovskogo AMN SSSR, Moskva

RUMANIA

V.A. ANANIEV, A.K. SUBADZE, S.V. NARSKI, I.F. BARINSKI, N.V. KAVERIN
and N.A. EVSTIGNEVA [Affiliations not given.]

"Study of the Etiology of Infectious Hepatitis."

Bucharest, Studii si cercetari de inframicrobiologie, Vol 14, No 3,
1963; pp 261-267.

Abstract [English summary modified]: Authors' unpublished data as well as Bulgarian, other Soviet, Czech, Japanese uncited publications are reviewed in support of authors' contention that infectious hepatitis can be caused by several different viruses each having their own specific properties and only vaguely related, as to ECHO, Coxsackie and other entero- and adenoviruses, canine hepatitis virus. Human cells (renal, endothelial vascular, intestinal, Detroit-6) are best media. In some instances, disease undistinguishable from infectious hepatitis appears to have been produced by known viruses.

1/1

SHUBLADZE, A.K.; ANAN'YEV, V.A.; MARSKIY, S.V.; BARINSKIY, N.F.;
KAVERIN, N.V.; YEVSTIGNEYEVA, N.A.

Some results of studying virus strains isolated from epi-
demic hepatitis patients. Vest. AMN SSSR 18 no.6:49-55 '63.
(MIRA 17:1)

ANAN'YEV, V.A.; SHUBLADZE, A.K.; NARSKIY, S.V.; BARINSKIY I.F.; KAVERIN, N.V.;
YEVSTIGNEYEVA, N.A.

Study of the etiology of Botkin's epidemic hepatitis. Vop.med.
virus. no.9:3-8 '64. (MIRA 18:4)

BEZPROZVANNYY, B.K.; ANAN'YEV, V.A.; NARSKIY, S.V. (Moskva)

Experimental study of infectious hepatitis in dogs. Arkh.pat. 27
no.7:70-72 '65. (MIRA 18:8)

1. Institut virusologii imeni D.I.Ivanovskogo (direktor -
deystvitel'nyy chlen AMN SSSR - prof. V.M.Zhdanov) AMN SSSR.

NARSKIY, V.V.; SEVEROV, N.A.

Plants in Central Asia and Kazakhstan turn out poor bricks. Stroi.
mat. 11 no.10:19-20 0 '65. (MIRA 18 10)

SAVEL'YEV, V.A.; NARST, A.L.; SHARNOPOL'SKIY, A.I.; KANT'OR, E.I.

The MGK magnetic gas analyzer for determining high oxygen concentrations. Avtom.i prib. no.3:69-71 JI+S '62.

(MIRA 16:2)

1. Lisichevskiy filial Opytno-konstruktorskogo byuro avtomatiki.

(Gases--Analysis)

CZECHOSLOVAKIA

NARSTEK, Z; Institute of Clinical and Experimental Surgery
(Ustav klinicke a Experimentalni Chirurgie), Prague.

" Outlook for Maser and Laser Applications in Surgery."

Prague, Ceskoslovenska Fysiologie, Vol 15, No 2, Feb 66, p 129

Abstract: The principle of masers and lasers is described and the various applications of these apparatus in the medical field are reviewed. The author describes his experiments with a laser in cardiovascular surgery, and the technique required for the regulation of penetration, and for cutting with a moveable ray in the myocardium while minimizing thermo-coagulation necrosis. 6 Western, 1 Czech reference. Submitted at the 8th Seminary for Medical Electronics at Brno, 21 Oct 64.

NARTADZHIYEV, M.

Distribution of clay minerals in Cretaceous sediments in the northern part of the Bukhara-Khiva oil- and gas-bearing province and the conditions governing their formation. Uzb. geol. zhur. 8 no.1:68-74 '64. (MIRA 18:5)

1. Institut geologii i razrabotki neftyanykh i gazovykh mestorozhdeniy AN UzSSR.

NARTADZHIYEV, M.

Terrigenous and mineralogical regionalization of Cretaceous sediments in the northern margin of the Bukhara-Khiva oil- and gas-bearing region, Zarafshan depression, and the south-western Kyzyl Kum. Uzb. geol. zhur. 9 no.5:92-96 '65.

(MIRA 18:11)

1. Institut geologii i razvedki neftyanykh i gazovykh mestorozhdeniy Gosudarstvennogo geologicheskogo komiteta SSSR. Submitted December 15, 1964.

L 64664-65

ACCESSION NR: AP5023232

RI/0003/64/015/010/0637/0640

AUTHOR: Zapan, N.; Andreescu, V.; Cosocanu, Z.; Marti, D.; Vrablescu, E.

TITLE: Techirghiol mud as an ion exchanger

SOURCE: Revista de chimie, v. 15, no. 10, 1964, 637-640

TOPIC TAGS: ion exchange, electric potential

ABSTRACT:

The authors

tested the mud from Techirghiol Lake by various methods, and particularly by the recording of the electrical potential during ion exchanges. The mud was found to possess ion-exchanging qualities for lower-valence ions, especially Ca^{++} , Mg^{++} , Fe^{++} , and K^+ . It behaved like synthetic ion exchangers when subjected to regeneration with a sodium chloride solution. / Orig. Art. has: 3 tables, 2 figures, 1 graph.

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L 6160-45

ACCESSION NO: AF-10312

ASSOCIATION: Catedra de chimie generala a Institutului de petrol, gaze si geologie,
Bucharest (Department of General Chemistry, Institute of Petroleum, Gases and
Geology

SUBMITTED: 00

ENCL: 00

S/S CODE: 00

NR REP SOV: 000

OTHER: 017

JPRS

114

KUMYKOV, Tugan Khabasovich, kand. ist. nauk; ~~MARTOKOV~~, M.G., red.;
BARGI, T.M., tekhn. red.

[Drawing the Northern Caucasus into the all-Russian market
in the 19th century; based on materials of Kabardino-
Balkaria, Northern Ossetia and Chechen-Ingushia] Vovlechenie
Severnogo Kavkaza vo vsesossiiskii rynok v XIX v.; po mate-
rialam Kabardino-Balkarii Severnoi Osetii i Checheno-
Ingushetii. Mal'chik, Kabardino-Balkarskoe knizhnoe izd-vo
1962. 199 p. (MIRA 15:11)

1. Zaveduyushchiy sektorom istorii Kabardino-Balkarskogo
nauchno-issledovatel'skogo instituta (for Kumykov).
(Caucasus, Northern-Commerce)

SOV/84-58-7-36/46

AUTHOR: Nartov, A.

TITLE: Brotherly Assistance to Rumania (Bratskaya pomoshch' Rumynii)

PERIODICAL: Grazhdanskaya aviatsiya, 1958, Nr 7, p 37 (USSR)

ABSTRACT: This is a short note on some planes of the Ukrainian Administration of the GVF sent to Rumania to provide chemical treatment of the Carpathian forests.

Card 1/1

HARTOV, G., insh.

Suspended railroad. IZh.tekh. 5 no.9:23-27 8 '60. (MIRA 13:10)
(Railroads, Suspended)

NARTOV, G., inzh.

Track repair without interruption of operations. IUn.tekh. 5
no.6:25-26 Je '61. (MIRA 14:9)
(Railroads--Maintenance and repair)

BELYAKOV, Ye.P.; KONOVALOV, V.S.; NARTOV, G.I.; PONOMAREV, V.S.;
STUDNITSYNA, K.P., red.; ALEKSEYEVA, T.V., tekhn. red.

[Rolling stock and equipment of railroad and city
transportation; catalog-handbook] Podvizhnoi sostav i
oborudovanie zheleznodorozhnogo i gorodskogo transporta;
katalog-spravochnik. Moskva, TsNIIMASH. Sec.1. 1962. 219p.
(MIRA 16:8)

(Streetcars) (Railroads--Rolling stock)

MARTOV, G., inzh.

Monorail railroad Moscow-Paris-New York. IUn.tekn. 7 no.12:46-48
D '62. (MIFA 16:4)

(Railroads, Suspended)

MIRCHINK, M.F.; KHA
Y.I.B.; MKRT
red.

AN. R. O. GRONEKA, V. I.;
O. S. NAFTOV, G. V.; KALAN
. A. P.,

[Tectonics and the zones of oil and gas accumulation in
the system of the Kama-Kinel' troughs] Tektonika i zony
neftegazonakopleniya Kamsko-Kinel'skoi sistemy prigrizbov.
Moskva, Nauka, 1965. 111 p. (S. 11)

1. Moscow. Institute of geology and mineralogy of the Academy of Sciences of the USSR.
payemykh.

MIRCHINK, M.F.; KHACHATRYAN, R.O.; MKRTCHYAN, O.M.; GROMEKA, V.I.; MITREYKIN,
Yu.B.; NARTOV, G.V.

Outlook for finding petroleum and trends in prospecting operations in
the Kama-Kinel' system of troughs. Geol. nefti i gaza 9 no.9:1-7 S
'65. (MIRA 18:9)

GRIGOR'YEV, Lev Yakovlevich; ASTRATOV, N.A., kand. tekhn. nauk,
retsensent; KARTOV, I.M., kand. tekhn. nauk, nauchn.
red.; YEROMITSKAYA, Ye.Ye., red.

[Ship vessels operating under pressure; determination
of stresses and deformations] Sudovye sosudy, rabotaiushchie
pod davleniem; opredelenie napriazhenii i deformatsii. Le-
ningrad, Sudostroenie, 1965. 194 p. (MIRA 18:6)

39186

S/262/62/000/007 003:016

1007/1207

2' 2/20

AUTHOR:

Nartov, I. M.

TITLE:

Experimental investigation of high-temperature strength of gas turbine components

PERIODICAL:

Referativnyy zhurnal, otdel'nyy vypusk. 42. Silovyye ustanovki, no. 7, 1962, 34, abstract 42.7.149. "Tr. Tsentr. n.i. in-ta morsk. flota", no. 34, 1961, 89-102

TEXT: The influence of thermal load on the mechanical strength [Abstracter's note of gas turbine components] has been investigated on turbine discs made of ЭИ-415 (EI-415) perlite and ЭИ-612 (EI-612) (austenitic) steel. Cycle temperature variations (fluctuations) resulted in failure to reduction of fatigue strength. As shown by the tests, reduction of frequency of thermal shocks applied to 1X18H11B (1Kh18N11B) steel test specimens, lowers the mechanical strength of the material. The material exhibits better resistance to cyclic power fluctuations at constant temperature than to constant load at varying temperature. In this case the endurance limit of the material becomes equal to the efficiency at maximum constant temperature of the cycle while the creep rate markedly increases. The author studies the particular case of thermal instability of turbine rotors due to the asymmetrical orientation of structural heterogeneities in the rotor forging. In such cases, even the slightest asymmetry in the heating or cooling operation (during heat treatment) leads to the appearance of a heterogeneous structure and, as a result of differences in the thermal expansion coefficients, also to distortions

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Experimental investigation of...

S/262/62/000:007:003:016

1007/1207

of the rotor. This occurs particularly in rotors made of molybdenum or moly-vanadium steels. The working reliability of the gas ducts of turbines is studied on the example of the behavior of austenite-steel gas ducts of the regional gas-turbine electric power station of Cherepetsk. It is shown that cracks in the welded seams are caused by internal residual stresses appearing during the welding process. Thus, for instance in a gas duct made of 1 × 1812T (1Kh1812T) austenitic steel, special research revealed the existence of internal residual stresses varying from + 20 to - 15 Kg/mm². Thermal stresses in all-forged gas turbine rotors and discs were determined both by theoretical computations and modelling of the stationary temperature field. Special experiments were carried out to find reliable data on the extent of thermal stresses appearing at the moment of starting and shutdown of the unit. These experiments are of particular value since they were carried out on a full-scale rotor. In the last part of the paper, the author reveals the close relationship between the cooling and heating state of the rotor and turbine casing, and points to the fact that, even in modern, light-weight aviation gas-turbines, the rate of temperature variation (during starting) in the rotor and turbine casing, may differ by a factor of 6 to 7. There are 6 references.

[Abstracter's note: Complete translation]

Card 2/2

MARTOV, I.M.

Selection of a material for marine gas turbine disks. Trudy
TSNIDF 8 no.42:64-70 '62. (MIRA 16:1)
(Marine gas turbines) (Gas turbine disks)

NARTOV, Igor' Mikhaylovich, inzh.; BORISOV, G.P., kand. tekhn.nauk, retsenzent; GIBALOV, G.P., dots., kand. tekhn.nauk, retsenzent; MOISEYEV, A.A., prof., nauchnyy red.; POLYAKOV, I.I., red.; KONTOROVICH, A.I., tekhn. red.

[English-Russian dictionary on gas turbine systems; with a supplementary alphabetical index of Russian terms] Anglo-russkii slovar' po gazoturbinnym ustanovkam; s prilozheniem alfavitnogo ukazatelya russkikh terminov. Leningrad, Sudpromgiz, 1962. 214 p. (MIRA15:11)

(Gas turbines--Dictionaries)

(English language--Dictionaries--Russian)

(Russian language--Dictionaries--English)

NARTOV, I.M.

Strength conditions of gas turbine disks and their decay. Izv
TSNIIMF 8 no. 340-50 '63.

Evaluating the operational reliability of marine gas turbine
disks with the help of an electronic computer. Ibid. 162-90

(MIRA 17:3)

NARTOV, I.M.

Using modern materials for marine gas turbine plants. Inform.
sbor. TSNIMF no.96. Tekh. ekspl. mor. flota no.23:84-97 '63
(MIRA 18:1)

NARTOV, I.M.

Investigating starting temperature fields of a marine gas turbine disk with the help of the "Minsk-1" electron digital computers. Trudy TSNIIMF no.60:30-42 '64. (MIRA 18:4)

NARTOV, I.M., kand. tekhn. nauk

Studying the prestarting heating of the gas turbine disk.

Trudy TSNIIMF no. 62:48-61 '65.

(MIRA 18:12)

L 05205-67

ACC NR: AT6022415

(N)

SOURCE CODE: UR/2752/65/000/068/0082/0096

AUTHOR: Nartov, I. M. (Candidate of technical sciences); Nakhimovskiy, M. A.

ORG: None

TITLE: The effect of temperature on the strength of marine steam turbines under start, stop and reverse conditions

SOURCE: Leningrad. Tsentral'nyy nauchno-issledovatel'skiy institut morskogo flota. Trudy, no. 68, 1965. Tekhnicheskaya ekspluatatsiya morskogo flota (Technical operation of the merchant marine), 82-96

TOPIC TAGS: marine engineering, marine engine, steam turbine, turbine rotor, thermal stress, engine control system

ABSTRACT: The thermal and strength characteristics of marine turbine rotors and housings are analyzed and experimental and theoretical studies associated with this question are discussed. The effects of stopping and starting procedures are considered with respect to possible emergency conditions. Starting temperature processes may produce emergency conditions for the following three reasons: 1. a difference in the thermal deformation of the rotor and stator; 2. impermissible deformation of rotor and stator parts; 3. excessive thermal stresses in the turbine parts. Temperature nonuniformity is the main cause for all of these conditions. Difference in the thermal deformation of rotor and stator may be due to axle clearance variation, radial

Cord 1/2

UDC: 621.125-5

L 05205-67

ACC NR: AT6022415

clearance variation or turbine housing buckling. The thermal deformation of rotor and stator are caused by thermal instability of the rotor and casing deformation. Thermal stresses in turbine parts are basically due to nonuniform heating. The effect of reversing maneuvers is considered with respect to three stages: the transition from forward to reverse, duration of full reverse speed and transition from reverse to forward. The thermal and strength characteristics of reverse working turbine first stage discs are evaluated. Three aspects of the temperature strength problem for the reverse turbine are considered with respect to reverse maneuvering: critical state of the disc, temperature field on the disc and stresses in the disc with respect to the critical state. The authors also discuss various trends of experimental and theoretical works related to this problem such as heat exchange in the flow-through part of the steam turbine and automatic control. Orig. art. has: 3 figures, 3 tables, 1 formula.

SUB CODE: 13/ SUBM DATE: None/ ORIG REF: 036/ OTH REF: 008

kh

Card 2/2

I. 09051-67

ACC NR: AR6032200 (N) SOURCE CODE: UR/0398/66/000/006/V007/V007

AUTHOR: Nartov, I. M.; Rozenblat, I. Kh.; Kastal'skiy, A. L.; Srabov, K. Ye.

TITLE: Technical operational indices of Peking tankers 6

SOURCE: Ref. zh. Vodnyy transport, Abs. 6V34

REF SOURCE: Inform. sb. Tsentr. n. -i. in-t morsk. flota, no. 4(152), 1966,
100-109

TOPIC TAGS: ship, vessel, steam superheater tanker/Peking tanker

ABSTRACT: A study has been made of the basic technical indices of the first 4 years of operation of six Peking tankers built in 1960—1963 with 40,000 t displacement and 19,000-hp steam turbines. An analysis is given, and data of the time in operation (sailing and standing) for this vessel is compared with those of "Leninskiy Komsomol" general cargo vessels. Data on the main operational characteristics of the vessel are presented: power, mean annual duration of operation and speed. Analysis of repair work done on the main parts of the power plant showed that the greatest labor input was required by the main boilers (87.6% of the overall cost of the boiler maintenance in the second year of operation). Failures of KVG-34 steam

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UDC: 629.123.56.002

L 09051-67

ACC NR: AR6032260

0

boilers, which had the largest number of failures, included leaks in economizers, cracks in hinges, spots in the tube expander of the steam superheaters, leaks in welds spots of the air heaters, worn-out nozzle sprayers, and a worn-out brick lining. The GTZA was the most reliable power plant. The periods during which the other main parts and mechanisms of the power plant worked were determined and presented in tabular form. A set of test runs is used for eliminating the basic structural defects in this series of ships. I. Makarov. [Translation of abstract]

SUB CODE: 13/

Card 2/2 not

ACC NR: AR6028515

(N)

SOURCE CODE: UR/0398/66/000 005/V015/V015

AUTHOR: Nartov, I. M.

TITLE: Experience in the operation of the main geared turbine unit in ships of the Leninskiy Komsomol type

SOURCE: Ref. zh. Vodnyy transport, Abs. 5V70

REF SOURCE: Inform. sb. Tsentr. n.-i. in-t morsk. flota, no. 37 (140), 1965, 83-90

TOPIC TAGS: marine equipment, propulsion device, propulsion engineering, propulsion performance, steam turbine, engine reliability, marine engine, turbine engine, steam auxiliary equipment, engine auxiliary equipment, cargo ship

ABSTRACT: A TS-1 GTZA [main geared turbine unit], with a dual casing containing two active turbines and a backing turbine installed inside the low pressure casing, which has a design rating of 13,000 hp and a maximum rating of 14,300 hp, has been installed in ships. An analysis of underway and at-anchor times for the ships of the particular type mentioned is made. Consideration is given to the basic reasons for failures of units and mechanisms requiring manhours as noted to eliminate them: (1) steamline 82 hours/ship/year (where hour is a planning hour, that is, the work of one member of the engineering department for one hour); (2) TVD [HP turbine] with steam chest, valves, maneuvering installation and TND [LP turbine] - 67 hours/ship/year; (3) main reduction gear - 24 hours/ship/year; (4) main condenser - 22 hours/

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UDC: 621.438:621-5

ACC NR: AR6028515

ship/year; (5) protection and lubrication systems - 19.2 hours/ship/year; (6) lube oil separator - 30 hours/ship/year; (7) lube oil filters - 47.2 hours/ship/year; and (8) main lube oil circulating and condensate pumps - 64 hours/ship/year. About 95% of all manhours expended on the GTZA are expended on the units and mechanism considered, or about 15% of all manhours expended on the entire main propulsion installation are expended as indicated. A composite diagram of repair work done on GTZA units is presented. 5 figures. S. Korzh. [Translation of abstract]

SUB CODE: 13

Card 2/2

ACC NR: AR6022397

(N)

SOURCE CODE: UR/0398/66/000/003/V011/V011

AUTHOR: Nartov, I. M.

TITLE: Investigation of prestart heating of a gas turbine disk

SOURCE: Ref. zh. Vodnyy transport, Abs. 3V82

REF SOURCE: Tr. Tsentr. n.-i. in-ta morsk. flota, vyp. 62, 1965, 48-61

TOPIC TAGS: gas turbine engine, turbine disk, heating, heat stress, engine cooling system, thermal process, *ENGINE STARTER SYSTEM*

ABSTRACT: The results of the theoretical and experimental investigation of the effect of special, prestart heating to the thermal condition of the disk in a marine gas turbine upon starting are cited. The investigations made indicate that any start can be safe if the disk is prepared in advance, heated so as to improve its start thermal condition. Electric heating units are needed to effectively organize this type of heating. When prestart heating of the disk is used it is helpful to cut out the air cooling system at some initial start point. 7 figures. Bibliography of 8 titles. [Translation of abstract]

SUB CODE: 13,20

Card 1/1

UDC: 621.438.001.4:629.12

ACC NR: AT6034794 (14) SOURCE CODE: UR/2914/66/000/042/0100/0109

AUTHOR: Nartov, I. M. (Candidate of technical sciences); Rozenblat, I. Kh.;
Kastal'skiy, A. L.; Srabov, K. Ye.

ORG: none

TITLE: Operational technical specification of "Peking" class tankers

SOURCE: Leningrad. Tsentral'nyy nauchno-issledovatel'skiy institut morskogo flota. Informatsionnyy sbornik, no. 42(152), 1963. Tekhnicheskaya ekspluatatsiya morskogo flota voprosy nadezhnosti sudov i ikh silovyykh ustanovok (Technical operation of the Merchant Marine; problems of reliability of ships and their power systems), 100-109

TOPIC TAGS: ship, marine engineering, marine engine, ocean transportation, tanker/Peking tanker

ABSTRACT: A detailed analysis is presented of the main technical characteristics of six tankers of the "Peking" class ships of 40,000-tons displacement. The indices are based on data concerning operation of the ships during the first four years after launching as indicated in Table 1 of the original article. The analysis covers

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UDC: 629.123.56.022

ACC NR: AT6034794

various runs made by the ships, standing time, various fuels used, engine performance, labor required for repairs, as well as power and speed indices. The article includes a detailed criticism of machinery defects. These are explained by the fact that "Peking" class ships are the first heavy-tonnage Soviet vessels to have steam turbines (19:000 hp each). Orig. art. has: 3 figures, and 4 tables. [GC]

SUB CODE: 13, 11/SUBM DATE: none/ORIG REF: 004/

Card 2/2

MARTOV, P. S.

"Mechanization of Interrow Cultivation of Forest Plantings." C and Agr Sci,
Voronezh Agricultural Inst, Min Higher Education USSR, Voronezh, 1954. (ML, No 5, Jan 55)

Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational
Institutions (13)

SO: Sum . No. 598, 29 Jul 55

NARTOV, V.

Best samples of explosionproof equipment. Inform. Bull. VDNKH
no. 4:12 Ap '65. (MIRA 12:5

1. Starshiy ekskursovod pavil'ona "Elektrotehnika" na Vystavke
dostizheniy narodnogo khozyaystva SSSR.

BOROVITSKIY, V.N.; NARTOV, V.I.

Exhibition on "Complex low-voltage commutation apparatus." Elektro-
tekhnika 34 no.12:56-57 D '63. (MIRA 17:1)

1. Direktor pavil'ona "Elektrofikatsiya SSSR" vystavki dostizheniy
narodnogo khozyaystva SSR (for Borovitskiy). 2. Starshiy inzhener-
metodist pavil'ona "Elektrofikatsiya SSSR" vystavki dostizheniy
narodnogo khozyaystva SSSR (for Nartov).

MARTOV, V.M.

"Eskapon" plastics and their use in the electric equipment industry. Inform. biul. VDNKH no.2:13-14 P '64.

(MIRA 17:8)

1. Ispolnyayushchiy obyazannosti starshnego inzhenera-metodista pavil'ona "Elektrifikatsiya SSSR" na Vystavke dostizheniy narodnogo khozaystva.

BEREZKIN, P.N.

BEREZKIN, P.N., insh.; BONDIN, Ye.A., insh.; GRIGOROV, G.Ye., insh.;
DURHOVSKIY, V.I., insh.; KOZHEUROV, P.I., insh.; MARTOV, Ye.G.,
insh.; RAZSHIGAYEV, A.F., insh.; RAYEVSKIY, S.A., insh.;
SAPOZHNIKOV, N.S., insh.; TELIPAN, M.G., insh.; CHURNOVSKIY,
Yu.I., insh.; CHIRNOV, D.A., insh.; DUGINA, N.A., tekhn.red.

[GtZ tractors] Traktory GtZ. Moskva, Gos. nauchno-tekhn.
ind-vo mashinostroit. lit-ry, 1957. 101 p. (MIRA 11:5)
(Tractors)

MARTOV, Yu.; SOBOLEV, V.

Contactless selective rela . Radio no.4:40 Ap '63. (MIRA 16:3)
(Electric relays)

NARTOV, Yu., inzh.; SOBOLEV, V., inzh.

Multichannel tuned relays. Radio no. 946-40 7 'ba.

(MTPA 11412)

L 18/48-66

DOC NR: AP600853

(A)

SOURCE CODE: UR/0286/65/000/023/0053/0053

AUTHORS: Barinov, I. A.; Sokolov, V. M.; Portnov, M. G.

53
8

ORG: none

TITLE: Acoustic receiver. Class 42, No. 176699

SOURCE: Svyaz' izobrazheniy i tovarnykh znakov, no. 23, 1965, 53

TOPIC TAGS: acoustic transducer, acoustic detector, electromagnetism, magnetic circuit, radio receiver

ABSTRACT: This Author Certificate presents an acoustic receiver based on the production of an output voltage by modulating a magnetic flux, and containing an electromagnetic system and a membrane. To provide for selective coupling of the acoustic signals and to increase the sensitivity, the electromagnetic system has resonating plates made of magnetically soft material, mounted symmetrically in the center part of the magnetic circuit (see Fig. 1).

Card 1/2

UDC: 534.232:534.121.1

1 12512-66

420 NR: 20600553

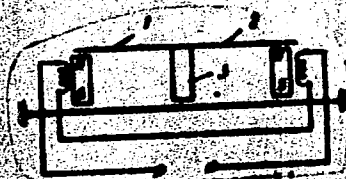


Fig. 1. 1 and 2 - resonating plates; 3 - center rod (center part) of magnetic circuit.

Orig. art. has: 1 diagram.

SUB CODE: 17, 09/ SUM DATE: 11 Dec 66

Card 2/2 77, 25

~~L-21789-66~~ EWT(d)/EMI(m)/EWE(v)/EWP(t)/EWP(k)/EWP(h)/EWP(1) JD
ACC: NRI AP6002915 SOURCE CODE: UR/0286/65/000/024/0079/0079

AUTHORS: Martov, Yu. A.; Portnoy, M. G. 28

ORG: none 18

TITLE: A device for controlling the thickness of galvanic coatings of items.
Class 42, No. 177095

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 24, 1965, 79

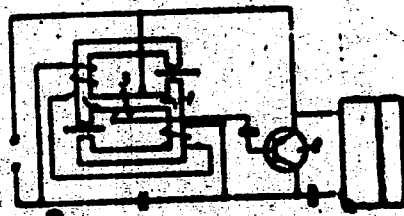
TOPIC TAGS: thickness gage, sensitivity increase, control equipment, magnetic analysis, circuit design

ABSTRACT: This Author Certificate presents a device for controlling the thickness of galvanic coatings of items. The device includes an electric induction detector with a three-bar symmetric core. The lateral bars of the core are provided with differentially connected magnetizing windings and contain gaps. These gaps are designed for holding the item being controlled and the calibration item. The middle bar of the core is provided with a measurement winding (see Fig. 1). The device also has an electric generator (made of semiconductor triodes) which supplies the power for the detector. The design increases the device's sensitivity.

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UDC: 531.717.55:621.357.76

L-21789-66
ACC NR: AP6002915



**Fig. 1. 1 - detector; 2 - generator;
3 - magnetizing winding.**

The magnetizing windings of the detector serve as the inductance of the generator loop and are connected to the triode generator collector circuit. The measurement winding of the detector is connected to the base circuit of the triode. Orig. art. has 1 figure.

2/20/70

KAKULIN, G.P., inzh.; MUCHNIK, P.I., inzh.; NARTOVA, Ch.I., inzh.

Plastics for combination shaft linings in potash mines. Shakht.
stroit. 8 no.4:6-7 Ap'64 (MIRA 17:7)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut organizatsii
i mekhanizatsii shakhtnogo stroitel'stva.

NARTOVA, L.S. (Moskva).

experience in teaching aerography in institutes of higher
technical education. Nov. 24, 1964. (MTR 18:3)

86072

S/180/60/000/005/013/033
EO73/E535

1B 8200

1416

AUTHORS: Kornilov, I. I. and Nartova, T. T. (Moscow) ✓ ✓

TITLE Refractoriness of Alloys of the System Titanium-Tin

PERIODICAL: Izvestiya Akademii nauk SSSR, Otdeleniye tekhnicheskikh nauk, Metallurgiya i toplivo, 1960, No. 5 pp. 133-136

TEXT: In earlier work (Refs. 1-4) the authors established the relations governing changes in the properties of titanium alloys as a function of the chemical composition and the character of the diagram of state. In this paper the results are described of investigations of the high temperature strength of binary Ti-Sn titanium alloys. From results obtained in investigating the diagram of state it was established that a considerable range of solid solution of tin in α -Ti (up to 21 wt.% Sn at 700°C) exists. The two-phase $\alpha + \gamma$ range extends at 700°C to about 42% Sn. for a content of 45.24% Sn in the Ti-Sn system. Ti_3Sn compounds form. In addition to investigating the structure and the properties of alloys of this system, the authors studied the high temperature strength of binary Ti-Sn alloys from the range of α solid solutions and the two-phase $\alpha + \gamma$ range with a tin concentration between 0 and 30 wt.% The high temperature strength of alloys with over 30 wt.% Sn was

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E073/E535

Refractoriness of Alloys of the System Titanium-Tin

not investigated with the exception of the alloy corresponding to the γ -phase, the Ti_3Sn base solid solution. The alloys were smelted in an arc furnace in an argon atmosphere from a charge consisting of titanium sponge of 99.8% purity and a specially smelted Sn-Ti alloy containing 69.5% Sn. Alloys containing up to 25% Sn were forged at 900°C and annealed in vacuum with step-wise cooling in accordance with the following regime: 50 hours at 1100°C, 100 hours at 1000°C and 200 hours at 800°C followed by slow cooling in the furnace down to room temperature. The microstructure of the specimens which was investigated after the high temperature tests had either a single-phase structure of α and γ solid solutions or a two-phase $\alpha + \gamma$ structure. Some characteristic microstructure photographs of the studied alloys are reproduced. The composition of the etching agent was 25% HF, 25% HNO_3 and 50% glycerine. Investigation of the high temperature strength of binary alloys was carried out by the centrifugal method in four stages. In each of these stages the same bending stress of 15 kg/mm² was applied. During the first stage the specimens were stressed for 100 hours

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S/180/60/000/005/013/033
E073/E535

Refractoriness of Alloys of the System Titanium-Tin

at 500°C, then the temperature was raised to 550°C and the tests were continued for another 100 hours (second stage). Following that, the temperature was raised to 600°C and the tests continued for 100 hours (third stage) and, finally, the temperature was raised to 650°C and the tests continued for another 100 hours (fourth stage). This regime was chosen in view of the very low high temperature strength of titanium, rarefied solid solutions of titanium and its two-phase alloys on the one hand, and the high strength at elevated temperatures of alloys in the range of concentrated, saturated and slightly over-saturated solid solutions on the other hand. On the basis of the obtained data, the creep curves of alloys of various compositions are plotted for all the four stages of investigation. It was found that the high temperature strength of Ti-Sn alloys increased gradually with increasing concentration of the tin in the α solid solution and the maximum high temperature strength is obtained for alloys whose composition approaches the limit solubility (18 to 22% Sn). Alloys with a clearly pronounced two-phase structure have a low high temperature strength, due to the coarse inclusions of the second phase. The $Ti_{12}Sn$ base alloy had the highest high temperature strength at all the applied test temperatures. The results obtained

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86672

S/180/60/COO/005/013/033
E073/E535

Refractoriness of Alloys of the System Titanium-Tin

on investigating the high temperature strength of binary Ti-Sn alloys are in good agreement with earlier established relations governing its changes in the metallic systems (Refs. 1-4 and 6-11). There are 3 figures and 11 Soviet references. ✓

SUBMITTED: February 23, 1960

Card 4/4

18 12 75

69056

AUTHORS: Kornilov, I. I., Martova, T. T. 3/078/60/005/03/021/048
B004/B015

TITLE: The Phase Diagram of the System Titanium - Tin

PERIODICAL: Zhurnal neorganicheskoy khimii, 1960, Vol 5, Nr 3, pp 622-629 (USSR)

ABSTRACT: The study of the ternary system Ti - Al - Sn induced the authors to investigate the phase diagram of the system Ti - Sn including the compound Ti_3Sn (0 - 25 atom% of Sn). Figure 1 shows the equilibrium diagrams of this system in the region of $\alpha \rightarrow \beta$ transformation as taken from publications (Refs 6-10). The authors point out the contradictions of these data. The raw materials were titanium metal of the type TG-0 (99.7% of Ti) and tin (99.9% of Sn). The alloys were molten in the arc in argon atmosphere for the purpose of structural analysis, thermal analysis, and hardness test. Alloys produced by way of powder metallurgy were used for the purpose of measuring the electrical resistance and testing the thermal stability. The authors describe in detail the homogenization of these alloys. Figure 2 shows the thermograms recorded by a Kurnakov pyrometer. The temperature of the $\alpha \rightarrow \beta$ transformation of solid solutions (Table 1) passes through a minimum (860°) at 5 atom% of Sn, after which it rises (20 atom% of Sn) to 890° , at which temperature the peritectic reaction $\alpha \rightarrow \beta + \gamma$ occurs. Table 2 shows the microstructures of differently treated alloys with varying tin con-

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69056

The Phase Diagram of the System Titanium - Tin

S/078/60/005/03/021/048
B004/B015

tent. Figure 3 shows some microstructures. The hardness test was carried out by means of the Vickers apparatus with a diamond pyramid and a load of 10 kg. As may be seen from table 3 and figure 4, hardness increases continuously with rising tin content in α - and β -titanium up to the solubility limit of Sn, after which it decreases again steadily with the occurrence of the γ -phase. Electrical resistivity (Table 4, Fig 5) increases with rising concentration of Sn in the solid solution of α -titanium. The transition from α to $(\alpha+\gamma)$ is characterised by a change in the slope of the curve. The electrical resistivity of the alloy with 14.3 atom% of Sn was measured in the range 20 - 1100° in a special vacuum apparatus (Table 5, Fig 6). The peritectic transformation at 890° is recognisable by a maximum of electrical resistance. Figure 7 gives the phase diagram of the system Ti - Sn as the final result. There are 7 figures, 5 tables, and 11 references, 5 of which are Soviet.

SUBMITTED: February 3, 1959

Card 2/2

18:1285
5.4110

69508

AUTHORS: Kornilov, I.I., Martova, T. T.S/020/60/131/04/033/073
B011/B017TITLE: Equilibrium Diagram¹⁶ of the Ternary System Ti¹⁷ - Al¹⁷ - Sn¹⁷

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol 131, Nr 4, pp 837-839 (USSR)

TEXT: Since no data are available in publications on the diagram mentioned in the title, the authors studied the equilibrium of the alloys of the mentioned system in the range limited by the partial ternary system Ti - Ti₃Sn - TiAl. The binary systems Ti - Al and Ti - Sn which form the latter ternary system show that in these two systems limited solid solutions are formed on the basis of α-titanium at 1240° in the system Ti - Al (due to peritectoid reaction between the β-phase of titanium and the γ-phase on the basis of the TiAl compound); these solutions are formed between the β-phase of titanium and the δ-phase (on the basis of compound Ti₃Sn), at 890° in the system Ti - Sn. For their investigation the authors employed the microstructural X-ray method and the hardness test of alloys. Several alloys were forged to accelerate the establishment of equilibrium. They were subjected to gradual thermal treatment in the vacuum: homogenization at 1200° for 100 h, annealing at 1100° for 50 h, 1000° for 200 h, 800° for 300 h, 600° for 500 h, and then left to cool in the furnace. Ti₃Sn - TiAl alloys were annealed for a longer period, and cooled slowly. The phase diagram (Fig 1)

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69508

Equilibrium Diagram of the Ternary System Ti - Al - Sn 8/020/60/131/04/033/073
B011/B017

was drawn on the basis of part of the Ti - Al - Sn system investigated at 600°. The following phases were observed: 1) Solid solution of aluminum and tin in α -titanium (α); 2) solid solution on the basis of the chemical compound TiAl (γ); 3) continuous solid solutions of the compounds Ti_3Al - Ti_3Sn which are in agreement as to their structure with the α - and δ -phases; 4) solid solution on the basis of the chemical compound Ti_3Sn (δ). As is shown by figure 1, the main part of the diagram consists of the one-phase range of the solid ternary $\alpha(\delta)$ -solution on titanium basis, and on the basis of the quasi-binary cross section Ti_3Al - Ti_3Sn . Between the latter compounds continuous solid solutions are formed. Alloys with a two-phase structure $\alpha+\delta$ (Fig 2b) were, in view of a possible formation of continuous solid solutions between α -titanium and Ti_3Sn , additionally annealed at 800° (for 1,000 h). Hence, their microstructure was slightly changed. Thus, the given conditions at which the state of equilibrium is attained are characterized by the presence of a two-phase range $\alpha+\delta$ which adjoins the side Ti - Sn of the diagram. As may also be seen from the diagram, the range of the solid γ -solution is considerably extended (\approx to 18% of Sn). In the part of the diagram investigated, no β -phase range was observed. There are 2 figures and 8 references. ✓

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Equilibrium Diagram of the Ternary System Ti - Al - Sn 69508
S/020/60/131/04/033/073
B011/B017

ASSOCIATION: Institut metallurgii im. A. A. Baykova Akademii nauk SSSR
(Institute of Metallurgy imeni A. A. Baykov of the Academy of
Sciences, USSR) ✓

PRESENTED: December 7, 1959, by I. I. Chernyayev, Academician

SUBMITTED: June 22, 1959

Card 3/3

KORNILOV, I.I.; NARTOVA, T.T.

Dependence of the creep of alloys in the binary system
titanium - tin on their composition. Trudy Inst. met.
no.8:107-110 '61. (MIRA 14:10)
(Titanium-tin alloys—Metallography)
(Creep of metals)
(Phase rule and equilibrium)

29013

18 9200

S/020/6*/40/004/014/023
E/C6/B*10

AUTHORS: Kornilov, I. I. and Nartova, T. T.

TITLE: Continuous solid solutions of metalides $Ti_3Al - Ti_3Sn$ in the system $Ti - Al - Sn$

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 140, no. 4, 1961, 823-831

TEXT. The authors studied the phase diagram of the ternary system $Ti - Al - Sn$. For this purpose, the properties of alloys of this system were investigated, the compositions of which are located in the section $Ti_3Al - Ti_3Sn$. Thermal, microstructural and X-ray structural analyses were carried out, and electric resistance and hardness were measured. The alloys were prepared from TC-00 (TG-00) titanium sponge (limit of stability $\sim 38 \text{ kg/mm}^2$), and high-purity aluminum and tin. Crystallization and phase conversion in the solid state were studied in these alloys by contactless thermal analysis in a plant designed by N. A. Nedumov (Ref. 16: ZhFKh, 34, no. 1, 184 (1960)). The phase diagram for the section $Ti_3Al - Ti_3Sn$ was constructed on the basis of results obtained (Fig. 1).

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X

29013

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B106/B110

Continuous solid solutions

The alloys of this section crystallize in the form of mutually limited solid solutions on the basis of the solid β -solution of the system $Ti-Al$ and on the basis of the compound Ti_3Sn and form eutectic mixtures with the eutectic point at 45% of Ti_3Sn ($\approx 30\%$ by weight of Sn). On slow cooling, these mixtures pass over into a continuous series of solid $\alpha(\delta)$ -solutions with phase conversion. At $960^\circ C$ the compound Ti_3Al is obtained by prolonged tempering from the solid $\alpha(\delta)$ solutions of the system $Ti-Al$ which in turn forms solid solutions with the compound Ti_3Sn . In this state, the alloys of the section Ti_3Al-Ti_3Sn form continuous solid solutions with hexagonal crystal lattice. The alloys studied exemplify a complicated phase equilibrium which considerably varies with temperature and conversions in the solid state. The above-mentioned formation of the continuous series of solid solutions in long tempered alloys may be regarded as a continuous replacement of tin atoms in the Ti_3Sn crystal lattice by aluminum atoms without change in the lattice type. There are 3 figures and 16 references. 10 Soviet and 6 non-Soviet. The three most recent references to English language publications read as follows

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29027

Continuous solid solutions ...

S/020/61/140/004/014/023
B106/B110

E. Ence, H. Margolin, J. Metals, 9, No 4, sect. 2, 484 (1957); D. Clark, J. C. Terry, Bull. Inst. Metals, 3, 116 (1956); P. Pietrokowsky, E. P. Frink, Trans. Am. Soc. Metals, 49, 339 (1957).

ASSOCIATION: Institut metallurgii im. A. A. Baykova Akademii nauk SSSR
(Institute of Metallurgy imeni A. A. Baykov of the Academy of Sciences USSR)

PRESENTED: April 20, 1961, by I. I. Chernyayev, Academician

SUBMITTED: March 27, 1961

Card 3/43

KORNILOV, I. I. (Moskva); MARTOVA, T. T. (Moskva)

Stress-rupture strength at 700° in alloys on a Ti Al compound
base. Izv. AN SSSR, Otd. tekhn. nauk. Met. i topl. no. 6:142-146
M-D '62. (MIRA 16:1)

(Titanium-aluminum alloys—Testing)
(Metals at high temperatures)

S/598/62/000,007/012/040
D244/D307

AUTHORS: Kornilov, I. I. and Nartova, T. T.

TITLE: Phase diagram of the ternary titanium-aluminum-tin system

SOURCE: Akademiya nauk SSSR. Institut metallurgii. Titan i yego splavy. no. 7, Moscow, 1962. Metallokhimiya i novyye splavy, 95-104

TEXT: The authors investigated a part of ternary system Ti-Al-Sn, close to the Ti corner of the triangular diagram, using thermal, microstructural and X-ray analysis. The maximum Al-Sn content of the system was 45%. Two polythermic sections of the system were constructed: A radial section passing through the compositions corresponding to compounds Ti_3Al and Ti_3Sn . The following phases were present in the system at $600^{\circ}C$: 1) Large area of solid solution of Al and Sn in α -Ti with the hexagonal structure; 2) continuous solid solution based on Ti_3Al and Ti_3Sn with an isomorphic

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Phase diagram of the ...

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$\alpha(o)$ -hexagonal structure; 3) limited α -solid solution based on compound TiAl with the hexagonal structure; 4) two-phase regions $\alpha + \delta$ and $\alpha(o) + \gamma$. A similar distribution of phases existed at 800°C. At 1000°C the area of β -solid solution close to the pure Ti point of the diagram extended from the side of Ti-Al (5.5% Al) to Ti-Sn side (~22% Sn). A large part of the diagram was covered by two-phase region $\beta + \alpha(o)$, the extent of the continuous $\alpha(o)$ solid solutions decreased and that of γ -solid ternary solution increased in comparison with the section at 600°C. At 1200°C the solid solution of Al and Sn occupied a considerable part of the diagram. The majority of investigated alloys underwent a solid state transition connected with polymorphic $\alpha \rightleftharpoons \beta$ -Ti transition. There are 8 figures.

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FEDOTOV, S.G.; NARTOVA, T.T.; SINODOVA, Ye.P.

Elastic properties of alloys of the titanium - aluminum system.
Dokl. AN SSSR 146 no.6:1377-1379 0 '62. (MIRA 15:10)

1. Institut metallurgii im. A.A. Baykova. Predstavleno akademikom
G.V. Kurdyumovym.
(Titanium-aluminum alloys)

L 19744-63 ENP(q)/EMT(m)/BDS AFFTC/ASD JD/JG
 ACCESSION NR: AP 3000916 3/0279/63/000/002/0141/0145

AUTHORS: Fedotov, S. G. ; Nartova, T. T. ; Sinodova, Ye. P. (Moscow) *X² B*

TITLE: Elastic properties of Ti-Sn alloys

SOURCE: AN SSSR, Iz. otd. tekhn. nauk. Metallurgiya i gornoye delo, no. 2, 1963, 141-145

TOPIC TAGS: Ti-Sn alloy, elastic properties

ABSTRACT: Elastic properties of alloys containing up to 25% (by weight) of Sn were studied. The elastic constants (Young's modulus, shear modulus, and Poisson ratio) were determined, and the characteristic Debye temperature of the alloys was calculated. It was established that alloys contain three phases that differ sharply in their elastic properties. The introduction of Sn into the alpha-solid Ti solution causes a minor decrease in the elastic constants (with a subsequent small increase as the alloys approach the saturation limit). The transition into the region of the binary phase (alpha + beta) is marked by a sudden decrease in the elasticity moduli. An intensive (almost linear) decrease in the elasticity constants in this region is observed with the increase in gamma-phase content. This continues up to the boundary of the homogeneous gamma-region of solid solutions on the Ti₃Sn
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base. The extremely high values of the elastic properties correspond to the compound Ti_3Sn . Elastic properties of the alloy with 2.5% of Sn decrease with the increase in temperature. The increase in Sn content lowers the rate of this decrease. The higher the Sn content, the higher are the values of the elastic properties of alloys at high temperatures. The elastic properties of a two-phase alloy with 25% of Sn do not vary significantly during heating. The increase in the heat resistance of the alpha-solid Ti solutions with the increase in Sn content is due to the increase in the force of interatomic bonds and in the stability of these bonds as compared to the bonds in pure Ti or in diluted solid solutions. Orig. art. has: 2 figures and 4 formulas.

ASSOCIATION: none

SUBMITTED: 23May62

DATE ACQ: 12Jun63

ENCL: 00

SUB CODE: ML

NO REF SOV: 007

OTHER: 006

Cord 2/2

ACCESSION NR: AT4007041

S/2598/63/000/010/0202/0206

AUTHOR: Kornilov, I. I.; Nartova, T. T.

TITLE: Investigation of the heat resistance of titanium aluminum tin alloys by the centrifugal method

SOURCE: AN SSSR. Institut metallurgii. Titan i yego splavy*, no. 10, 1963.
Issledovaniya titanovykh splavov, 202-206

TOPIC TAGS: titanium aluminum tin system, titanium aluminum tin alloy, titanium alloy heat resistance, titanium alloy creep, Kornilov creep test, heat resistance, creep strength

ABSTRACT: In order to evaluate the creep strength of Ti-Al-Sn alloys in relation to temperature, composition and phase structure, the authors investigated the heat resistance of various cross sections of this system by the centrifugal bending method. Alloys were prepared in an arc furnace, annealed at 850C for 30 minutes and then subjected to stresses of 15-25 kg/mm² at temperatures of 500-800C for up to 400 hours. A study of the radial cross section in which Al:Sn = 1:1 showed maximal heat resistance in a mixture containing 30 wt. % Al + Sn, near the transition point from a solid solution to a

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ACCESSION NR: AT4007041

heterogeneous alloy. The results of studies on other cross sections, some of which are shown in Fig. 1 of the Enclosure, indicate that the heat resistance increases markedly in the area of the metallide solid solution, being considerably higher than for solid solutions of the metals themselves. Alloys of the Ti_3Al-Ti_3Sn system, corresponding to a continuous solid solution of the metallides, were found to show a continuous range of heat resistance, with composition maxima related to the time of deformation. The maximal heat resistance in this system was shown by alloys based on a compound of Ti and Al. Orig. art. has: 3 figures.

ASSOCIATION: Institut metallurgii AN SSSR (Metallurgical Institute, AN SSSR)

SUBMITTED: 00

ENCL: 01

SUB CODE: MM

NO REF SOV: 006

OTHER: 000

Card 2/3

ACCESSION NR: AT4007041

ENCLOSURE: 01

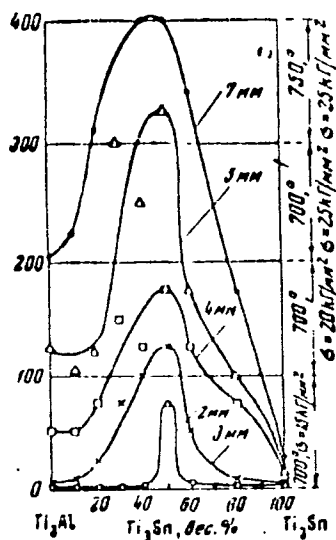


Fig. 1. Relationship between composition and heat resistance of alloys in the Ti_3Al - Ti_3Sn cross section of the triple system Ti-Al-Sn. Left ordinate = time in hrs. required to reach the bending point; right ordinate = temperature and stress ($^{\circ}C$ and kg/mm^2) during deformation for each 100 hours; abscissa = wt. % Ti_3Sn .

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